# *Project Baseline Summary Report*

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Rocky Flats**

Print Date: **3/9/2000**

Site Summary Level: **Rocky Flats Environmental Technology Site**

HQ ID: **0329**

Project **RF003 / Remediation Waste & Contingent Storage Project**

## General Project Information

### Project Description Narratives

**Purpose, Scope, and Technical Approach:**

Purpose: The purpose of this project is to provide the resources necessary for the development of a new low level mixed (LLM) waste storage facilitiy at the Rocky Flats Environmental Technology Site (RFETS or Site). The purpose of this facility is to provide capacity and capability to store, stage, and ship the large volumes of remediation waste anticipated to be generated from the decontamination, decommissioning, and demolition of Site facilities, as well as from restoration activities associated with contaminated areas at the Site. The Department of Energy has been designated a Corrective Action Management Unit (CAMU) for bulk and containerized storage of these remediation wastes at RFETS by the Colorado Department of Health. While a CAMU designation is been received for both a bulk and containerized storage area, this project addresses the specific need for contingent containerized storage only as the first contingency option. The CAMU, referred to as the Containerized Storage Facility (CSF) is being planned as an option to facilitate site closure at RFETS and to serve as a storage contingency in the event assumptions regarding generation rates and offsite disposal capabilities prove to be modestly invalid. Bulk storage is addressed as a secondary contingency in the event that assumptions regarding generation rates, availability of offsite disposal, etc. should change dramatically.

Current waste generation projections indicate over 100,000 m3 of low level mixed remediation waste will be generated over the life of the closure project at the Site. In addition, uncertainties in the future availability of offsite disposal facilities underscore a need for a flexible waste management strategy in order to achieve cost effective and timely site closure. This CSF provides a mechanism for ensuring the ability to manage such long term flexibility.

Scope: The scope of this project includes design, siting and construction of a CSF for storage of remediation wastes at RFETS. In addition, it includes the demolition of the facility. The CAMU designation for the CSF was received in August, 1997. The need for the CSF is dependent on the waste volumes generated during Site clean up and closure. As such, periodic evaluations will be conducted to determine if it is still necessary to construct and operate such a facility. Instead of managing waste from each contaminated area individually, the CSF contingency allows for remediation waste to be brought to one centralized facility for storage and preparation for offsite shipment, treatment, and disposal.

The waste to be managed in the facility is low-level mixed remediation waste. Process waste is excluded as it is not eligible for the benefits provided by CAMU management. For definition purposes, Remediation Waste includes: (1) solid, hazardous, and mixed wastes; (2) all media and debris that contain hazardous substances, listed hazardous or mixed wastes or that exhibit a hazardous characteristic; and (3) all hazardous substances generated from activities regulated under the Rocky Flats Cleanup Agreement (RFCA) as a RCRA corrective action or a CERCLA response action, including decommissioning. Remediation waste does not include wastes generated from non-ER or non-decommissioning activities. Further clarification of this definition is contained within the Rocky Flats Cleanup Agreement (RFCA).

CAMU landlord functions are also included in this PBS. The landlord functions ensure that the facility and immediate area around the facility is maintained in a safe, secure, environmentally compliant and operable status in support of RFCA milestones, performance measures and other risk reduction efforts until the facility is demolished.

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## Project Description Narratives

Technical Approach: The CSF would support a cost-effective, flexible, and achievable remediation waste management strategy for RFETS. The CSF would allow early cleanup to proceed by providing interim onsite storage for remediation wastes in the event offsite shipment is delayed. Such interim storage will occur in a monitored and retrievable fashion to facilitate ultimate offsite treatment and disposal. The CSF would store waste ready to ship in the near-term to an available offsite disposal or treatment facility. The flexibility provided by the CSF contingency enhances DOE`s ability to ensure timely and cost-effective site closure. The CAMU designation was pursued since it provides some legitimate regulatory flexibility in the manner in which remediation wastes are managed. Specifically, it allows for storage of untreated LLM wastes while identifying economically advantageous methods of treatment and disposal.

Only remediation wastes would be managed in this facility. The CSF has been designated for storage only. Closure of the facility would be in accordance with cleanup levels established in the RFCA.

The CSF area is proposed to be located within the Industrial Area in the southwestern quadrant. The CSF would consist of metal storage buildings with sealed concrete floors and would be constructed to store containerized remediation waste. The facility would be modular in design and consist of several buildings so that facility size can be adjusted according to need. The facility is currently designed to support storage of up 100,000 cubic yards (76,500 m3) of remediation waste stored in four 25,000 cubic yard (19,125 m3) "pre-engineered" metal skinned modules. Within the facility, the waste would actually be containerized in individual 20 cubic yard (15.3 m3) "roll-off" - type top loading containers. Based on current remediation waste projections, only one of the four storage modules will be required and, if necessary, it would be constructed and operationed to accomodate the expectation of a significant increase in generation of remediation waste.

**Project Status in FY 2006:**

This project will be completed.

**Post-2006 Project Scope:**

No activities are currrently scheduled to occur after 2006 for this project.

**Project End State**

All wastes managed in the CSF will be treated and/or disposed of in approved and liscensed offsite facilities. The facility will be decommissioned and dismantled for removal from the Site. It is anticipated that the facility can be clean closed and that minimal post closure care, if any, is anticipated. Since the facility does not currently exist, and is not currently addressed in a specific cluster closure project, it is included as part of this project.

**Cost Baseline Comments:**

Cost estimates are based on assumptions and data developed by the technical groups that have responsibility for managing the work. To the extent

## Project Description Narratives

practical, all cost estimates are Activity-Based Costs (ABC) and tied directly to a defined and detailed work scope. The estimates are developed at the activity level and are further divided into line items. Line items represent individual resource contributions to activities and are the lowest level of input to the planning system. Once the cost estimate is developed,
each activity is evaluated for cost, technical and schedule risk and the appropriate contingency is determined. Detailed estimates and the basis of estimates (BOEs) for the 2006 Closure Plan are available at the Site.

**Safety & Health Hazards:**

The principle hazards in the Remediation Waste and Contingent Storage Project are radiological, chemical, construction and other standard industrial hazards. Since the remediation waste will be stored and packaged in drums waiting offsite shipment, the hazards are evaluated as low risk with the potential for some low level radiological or chemical contamination, which will exist throughout the project. This activity will involve primarily storage, surveillance/inspection, and building maintenance/upkeep, including the design and construction of new facilities. These hazards will be analyzed and categorized in accordance with the RFETS Safety and Health Program infrastructure policies, manuals, and procedures.

**Safety & Health Work Performance:**

This project will be completed within the RFETS Safety and Health Program and within the controls and authorization basis documents defined above to ensure the safety and health of the worker, public and the environment. RFETS has implemented an integrated safety management system consisting of the following elements: radiological safety, criticality safety, emergency management, fire safety, industrial hygiene, nuclear safety, occupational medicine, occupational safety, safeguards and security, safety integration, performance oversight, and standards management. RFETS provides site wide infrastructure programs for each functional area to establish consistent safety standards and support for this project. Safety and health success results from the efficient and effective implementation of these programs. This project is responsible for ensuring that the necessary elements of the safety and health programs are incorporated into the specific project plans and implementing documents, and that an appropriate Readiness Determination and Safety Evaluation Screen (SES)/Unreviewed Safety Question Determination (USQD) have been performed.

**PBS Comments:**

Not Applicable.

**Baseline Validation Narrative:**

Although the 2006 Closure Plan has not been officially validated, it has undergone a high level review by Rocky Flats Field Office (RFFO) and Headquarter personnel. Current independent validation efforts include the following: 1) RFFO has contracted an independent firm to perform a baseline confidence review of the 2006 Closure Plan by the end of FY99, and 2) the Office of Field Management (FM) has contracted a big-five accounting firm to validate the 2006 Closure Plan.

In addition to the 2006 Closure Plan validation efforts, results/recommendations from several previous baseline validation efforts were used in the development of the 2006 Closure Plan. These validations included: 1) The U.S. Army Corps of Engineers (USACE) performed a validation of the Rocky Flats Ten Year Plan in FY97/FY98, 2) Kaiser-Hill contracted Price Waterhouse Coopers, LLP to conduct and independent validation effort of the 2010 Closure Project Baseline that concluded in May of FY99, and 3) Kaiser-Hill engaged Arthur Andersen, LLP to conduct a schedule and cost risk review of the 2010 Closure Project Baseline.

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Project **RF003 / Remediation Waste & Contingent Storage Project**

## General PBS Information

**Project Validated?** **Date Validated:**

**Has Headquarters reviewed and approved project?** No

**Date Project was Added:** 12/1/1997

**Baseline Submission Date:**

**FEDPLAN Project?** Yes

**Drivers:**

| CERCLA | RCRA | DNFSB | AEA | UMTRCA | State | DOE Orders | Other |
|---|---|---|---|---|---|---|---|
| Y | Y | N | N | N | Y | Y | N |

## Project Identification Information

**DOE Project Manager:** Jessie Roberson

**DOE Project Manager Phone Number:** 303-966-2263

**DOE Project Manager Fax Number:** 303-966-4775

**DOE Project Manager e-mail address:** ten.year.plan@rfets.gov

**Is this a High Visibility Project (Y/N):**

## Planning Section

### Baseline Costs (in thousands of dollars)

| | 1997-2006 Total | 2007-2070 Total | 1997-2070 Total | 1997 | Actual 1997 | 1998 | Actual 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PBS Baseline (current year dollars) | 201 | 0 | 201 | 200 | 200 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS Baseline (constant 1999 dollars) | 201 | 0 | 201 | 200 | 200 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (current year dollars) | 201 | 0 | 201 | 200 | 200 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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**Baseline Costs (in thousands of dollars)**

| | 1997-2006 Total | 2007-2070 Total | 1997-2070 Total | 1997 | Actual 1997 | 1998 | Actual 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PBS EM Baseline (constant 1999 dollars) | 201 | 0 | 201 | 200 | 200 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | 2007 | 2008 | 2009 | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PBS Baseline (current year dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS Baseline (constant 1999 dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (current year dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (constant 1999 dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Baseline Escalation Rates**

| 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00% | 0.00% | | 2.70% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |

| 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |

## Project Reconciliation

**Project Completion Date Changes:**

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## Project Reconciliation

**Previously Projected End Date of Project:** 9/30/2010

**Current Projected End Date of Project:** 9/29/2006

**Explanation of Project Completion Date Difference (if applicable):**

Scope Deletion

The construction of the CAMU has currently been eliminated.

Efficiencies

New Scope

Cost Growth

Science & Technology

Other

The scope of work and end state conditions for the 2006 Plan are similar to the current 2010 Baseline, with a four-year acceleration and a reduction in cost being the two most significant differences. The bottom-up estimate for the 2006 Plan is a $1.65 billion improvement over the comparable activity-based bottoms-up detail estimate for 2010.

To close the Site four years earlier than the current 2010 Baseline requires a strategically different approach. The two key principles followed in preparing the 2006 Baseline were: 1) safely reducing the urgent risks first, and 2) performing work in a sequence that reduces or eliminates operations, maintenance and security costs (often referred to as - mortgage costs) as early as possible. Key to the 2006 Baseline approach is early closure of the secured Protected Area. Closing the Protected Area as soon as possible means that the high security and maintenance costs for this area can be redeployed to accelerate other closure activities. In addition, D&D and SNM risk reduction activities will be performed simultaneously rather than sequentially, supporting both the risk reduction and mortgage reduction principles. The D&D of non- and lower-contaminated facilities and most environmental remediation work will be deferred until later in the project to allow resources to be focused in the areas that result in the greatest reduction in risks and mortgage costs.

## Project Cost Estimates (in thousands of dollars)

| | | | | | |
|---|---|---|---|---|---|
| **Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):** | 8,880 | **Actual 1997 Cost:** | 200 | **Actual 1998 Cost:** | 1 |
| **Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):** | 8,679 | **Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):** | | | 234 |
| **Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):** | 8,913 | | | | |

## Project Cost Changes

**Cost Adjustments** **Reconciliation Narratives**

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## Project Reconciliation

| | | |
|---|---|---|
| **Cost Change Due to Scope Deletions (-):** | 8,913 | The construction of the CAMU has currently been eliminated. |
| **Cost Reductions Due to Efficiencies (-):** | | |
| **Cost Associated with New Scope (+):** | | |
| **Cost Growth Associated with Scope Previously Reported (+):** | | |
| **Cost Reductions Due to Science & Technology Efficiencies (-):** | | |
| **Subtotal:** | 0 | |
| **Additional Amount to Reconcile (+):** | 0 | |
| **Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):** | **0** | |

## Milestones

| Milestone/Activity | Field Milestone Code | Original Date | Baseline Date | Legal Date | Forecast Date | Actual Date | EA | DNFSB | Mgmt. Commit. | Key Decision | Intersite |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Complete PBD 003 - Remediation Waste & Cont Stor | RF-OTHE-03 | | 9/29/2006 | | 9/29/2006 | | | | | Y | |
| PBD003 Project Start | | | 10/1/1997 | | | | | | | | |

## Milestones - Part II

| Milestone/Activity | Field Milestone Code | Critical Decision | Critial Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Complete PBD 003 - Remediation Waste & Cont Stor | RF-OTHE-03 | | | | Y | Y | | | | | Kaiser Hill Internal ( KHIs ) Milestones |
| PBD003 Project Start | | | | Y | | | | | | | PBD003 Project Start |